## RECEIVED

NOV 01 2000

## SEQUENCE LISTING

.<110> Keyt, Bruce A.. Nguyen, Francis H. Ferrara, Napoleone

<120> NUCLEIC ACIDS ENCODING VARIANTS OF VASCULAR ENDOTHELIAL CELL GROWTH FACTOR

<130> A-62326-2

<140> 09/346,069

<141> 1999-07-01

<150> 08/567,200

<151> 1995-12-05

<150> 60/002,827

<151> 1995-08-25

<160> 42

<170> PatentIn Ver. 2.1

<210> 1

<211> 990

<212> DNA

<213> Bovine

<220>

<221> CDS

<222> (57)..(632)

5

20

<400> 1

cagtgtgctg gcggcccggc gcgagccggc ccggccccgg tcgggcctcc gaaacc atg 59

Met

4e C

1

aac ttt ctg ctg tct tgg gtg cat tgg agc ctc gcc ttg ctg ctc tac 107 Asn Phe Leu Leu Ser Trp Val His Trp Ser Leu Ala Leu Leu Leu Tyr

10 15

ctc cac cat gcc aag tgg tcc cag gct gca ccc atg gca gaa gga gga 155 Leu His His Ala Lys Trp Ser Gln Ala Ala Pro Met Ala Glu Gly Gly

25

ggg cag aat cat cac gaa gtg gtg aag ttc atg gat gtc tat cag cgc 203 Gly Gln Asn His His Glu Val Val Lys Phe Met Asp Val Tyr Gln Arg



35 40 45

	tac Tyr															251
	gat Asp		•													299
_	tgc Cys			_	-		-			-						347
	gag Glu					_	_	Ile	_							395
	cag Gln 115					_	_									443
_	aga Arg		_		_	_	•	_		_			_			491
_	tca Ser	_		_	_		_		_							539
	tgt Cys															587
	tta Leu		-	-		-	-	-	-	-	-			tga		632
gcc	gggca	agg a	aggaa	aggag	gc ct	caat	cago	g gti	tcgg	ggaa	ccag	gatct	cct	cacca	aggaaa	692
gac	tgata	aca ç	gaaco	gatco	ga ta	acaga	aaaco	c acg	gctgo	ccgc	cac	cacac	cca	tcac	catcga	752
cagaacagtc cttaatccag aaacctgaaa tgaaggaaga ggagactctg cgcagagcac									812							
tttgggtccg gagggcgaga ctccggcgga agcattcccg ggcgggtgac ccagcacggt								cacggt	872							
ccc	tctt	gga a	attgg	gatto	eg ed	cattt	tatt	tt	ctto	gctg	ctaa	aatca	acc	gagco	ccggaa	932

b'

.

<210> 2

<211> 191 <212> PRT <213> Bovine <400> 2 Met Asn Phe Leu Leu Ser Trp Val His Trp Ser Leu Ala Leu Leu Leu 10 Tyr Leu His His Ala Lys Trp Ser Gln Ala Ala Pro Met Ala Glu Gly 25 Gly Gly Gln Asn His His Glu Val Val Lys Phe Met Asp Val Tyr Gln Arg Ser Tyr Cys His Pro Ile Glu Thr Leu Val Asp Ile Phe Gln Glu Tyr Pro Asp Glu Ile Glu Tyr Ile Phe Lys Pro Ser Cys Val Pro Leu Met Arg Cys Gly Gly Cys Cys Asn Asp Glu Gly Leu Glu Cys Val Pro Thr Glu Glu Ser Asn Ile Thr Met Gln Ile Met Arg Ile Lys Pro His 100 105 Gln Gly Gln His Ile Gly Glu Met Ser Phe Leu Gln His Asn Lys Cys 120 Glu Cys Arg Pro Lys Lys Asp Arg Ala Arg Gln Glu Asn Pro Cys Gly . Pro Cys Ser Glu Arg Arg Lys His Leu Phe Val Gln Asp Pro Gln Thr 150 Cys Lys Cys Ser Cys Lys Asn Thr Asp Ser Arg Cys Lys Ala Arg Gln 165 170 Leu Glu Leu Asn Glu Arg Thr Cys Arg Cys Asp Lys Pro Arg Arg 185 180

By T

<210> 3 <211> 59 <212> DNA <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic.

<400> 3 cctatggctg aaggcggcca gaagcctcac gaagtggtga agttcatgga cgtgtatca 59

```
<210> 4
<211> 99
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic.
<400> 4
agtagcaagc ttgacgtgtg gcaggcttga gatctggcca tacacttgag tgacaatgac 60
atccactttg cctttctctc cacaggtgtc cactcccag
                                                                    99
<210> 5
<211> 30
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic.
<400> 5
aggetgetge agttegaegt gggagtggae
                                                                    30
<210> 6
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic.
<400> 6
ccctcctccg gctgccatgg gtgc
                                                                    24
<210> 7
<211> 30
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic.
<400> 7
cttcaccacg gcggcggcat tctgccctcc
                                                                    30
```

<210> 8	
<211> 33	
<212> DNA	
<213> Artificial Sequence	
-	
<220>	
<223> Description of Artificial Sequence:	Synthetic.
<400> 8	
ctgatagacg gccatgaagg ccaccacttc gtg	33
<210> 9	
<211> 24	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Description of Artificial Sequence:	Synthetic.
<400> 9	
gcagtagctg gcctgataga catc	24
210: 10	
<210> 10	
<211> 33 <212> DNA	
<213> Artificial Sequence	
(213) Arctificial Bequence	
<220>	
<pre>&lt;223&gt; Description of Artificial Sequence:</pre>	Synthetic
	27
<400> 10	
caccagggtg gcgattgggg cgcagtagct gcg	. 33
	·
<210> 11	
<211> 36	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Description of Artificial Sequence:	Synthetic.
<400> 11	
atcadadtad doctadaada tadocaccaa datoto	36

```
<210> 12
 <211> 33
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: Synthetic.
 <400> 12
 gaagatgtag gcgatggcgg cagggtactc ctg
                                                                     33
 <210> 13
 <211> 24
 <212> DNA
<213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: Synthetic.
 <400> 13
 acaggatggg gcgaagatgt actc
                                                                     24
 <210> 14
 <211> 24
 <212> DNA
 <213> Artificial Sequence
 <223> Description of Artificial Sequence: Synthetic.
 <400> 14
 gccccgcag gccatcaggg gcac
                                                                     24
 <210> 15
 <211> 36
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: Synthetic.
<400> 15
gggcacacag gccaggccgg cggcattgca gcagcc
                                                                     36
```

```
<210> 16
 <211> 27
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: Synthetic.
 <400> 16
 gatgttggag gcggcagtgg gcacaca
                                                                     27
 <210> 17
 <211> 36
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: Synthetic.
 <400> 17
 ctggccttgg gcaggggga tggccataat ctgcat
                                                                     36
 <210> 18
<211> 33
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic.
<400> 18
gaageteatg geteetatgg cetggeettg gtg
                                                                    33
<210> 19
<211> 30
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic.
<400> 19
gcattcacag gcgttggcct gtaggaagct
                                                                    30
```

```
<210> 20
 <211> 24
 <212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic.
<400> 20
tggtctgcag gcacatttgt tgtg
                                                                    24
<210> 21
<211> 33
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic.
<400> 21
ttgtcttgcg gcggcggcgg ctggtctgca ttc
                                                                    33
<210> 22
<211> 27
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence: Synthetic.
<400> 22
tgctctatcg gcggctggtc tgcattc
                                                                    27
<210> 23
<211> 27
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic.
<400> 23
```

27

ttgtcttgcg gcggctttct ttggtct

```
<210> 24
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic.
<400> 24
tttctttggg gcgcattcac attt
                                                                     24
<210> 25
<211> 30
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic.
<400> 25
acagggattg gcttgggctg ctctatcttt
                                                                     30
<210> 26
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic.
<400> 26
catggtgatg gcggactcct cagt
                                                                     24
<210> 27
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic.
<400> 27
```

caccacttcg gtatgattct gccc

24

<210> 28 <211> 24 <212> DNA	
<213> Artificial Sequence	
<220>	
<223> Description of Artificial Sequence: Synthetic.	
<400> 28	
ctccaggccg gtgtcattgc agca	24
<210> 29	
<211> 24	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Description of Artificial Sequence: Synthetic.	
<400> 29	
gcaacgcgag gttgtgtttt tgca	24
<210> 30	
<211> 24	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Description of Artificial Sequence: Synthetic.	
<400> 30	
tctgcaagtg gtttcgttta actc	24
<210> 31	
<211> 27	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Description of Artificial Sequence: Synthetic.	
<400> 31	
caccacttcg tgggcattct gccctcc	27

```
<210> 32
<211> 27
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic.
<400> 32
cttcaccact tcggcatgat tctgccc
                                                                     27
<210> 33
<211> 27
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic.
<400> 33
gaacttcacc acggcgtgat gattctg
                                                                    27
<210> 34
<211> 27
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic.
<400> 34
gacatccatg aaggccacca cttcgtg
                                                                    27
<210> 35
<211> 30
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic.
<400> 35
gcgctgatag acggccatga acttcaccac
                                                                    30
```

```
<210> 36
 <211> 27
 <212> DNA
 <213> Artificial Sequence
 <220>
<223> Description of Artificial Sequence: Synthetic.
 <400> 36
ggtctcgatt ggggcgcagt agctgcg
                                                                     27
<210> 37
<211> 27
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic.
<400> 37
ctcctggaag atggccacca gggtctc
                                                                     27
<210> 38
<211> 27
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic.
<400> 38
ctcatcaggg taggcctgga agatgtc
                                                                    27
<210> 39
<211> 27
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic.
<400> 39
gtaatcgatc tcggcagggt actcctg
                                                                    27
```

	<210> 40	
	<211> 27	
	<212> DNA	
	<213> Artificial Sequence	
	<220>	
	<pre>&lt;220&gt; &lt;223&gt; Description of Artificial Sequence: Synthetic.</pre>	
	(223) Description of Artificial Sequence: Synthetic.	
	<400> 40	
	gtccaccagg gtggcgattg gatggca	27
	<210> 41	
	<211> 27	
	<212> DNA	
	<213> Artificial Sequence	
	<220>	
	<223> Description of Artificial Sequence: Synthetic.	
	<400> 41	
	gatgtactcg atggcatcag ggtactc	27
	<210> 42	
$\sim 1$	<211> 27	
Ω'	<212> DNA	
	<210> 42 <211> 27 <212> DNA <213> Artificial Sequence <220> <223> Description of Artificial Sequence Combation	
المرارم		
Moure	`<220>	
U*	<223> Description of Artificial Sequence: Synthetic.	
	<400> 42	
	cttgaagatg taggcgatct catccag	27